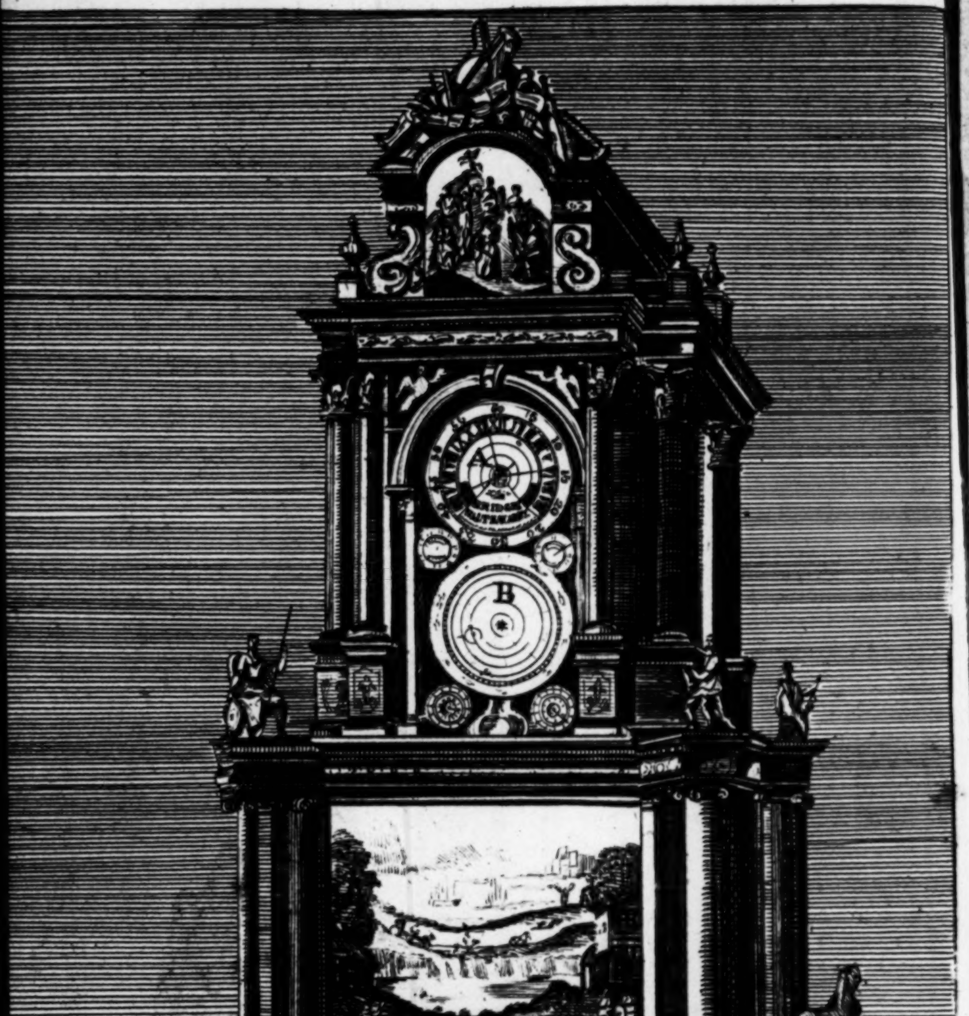
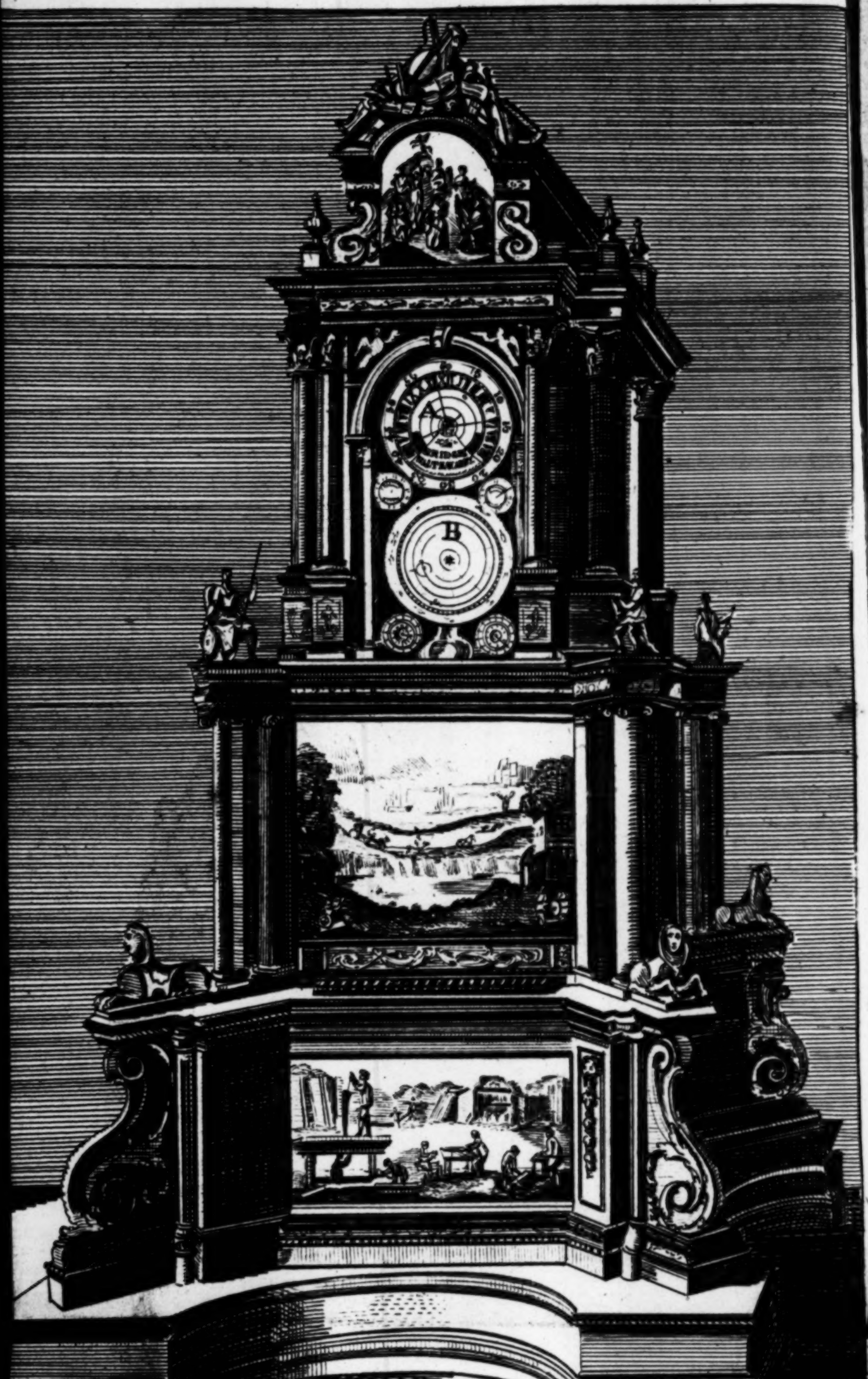


The Microcosm.

Clowes Sculp



Clowes Sculp

The Microcosm.

A SUCCINCT
DESCRIPTION
OF THAT
Elaborate and Matchleſs PILE of ART,

CALLED, THE
MICROCOSM.
WITH A SHORT ACCOUNT OF THE
SOLAR SYSTEM,
INTERSPERSED WITH
POETICAL SENTIMENTS,
ON THE
PLANETS.
Extracted from the moſt approved AUTHORS
on that SUBJECT.

The FIFTH EDITION, with ADDITIONS.

NEWCASTLE:
Printed by I. THOMPSON, Eſq; for the PROPRIETOR,
Mr EDWARD DAVIES.

[Price SIX-PENCE.]

TO THE READER.

IN *Juſtice to the Memory of the late Mr* HENRY BRIDGES, *of* WALTHAM ABBEY, *Architect, I muſt inform the Reader, that the* MICROCOSM *was conſtructed by that excellent Artiſt. It was the Produce of more than twenty Years cloſe Study and Application; and when compleated, it received the Approbation of the Nobility, the Royal Society, the Gentry, and the curious Part of Mankind in general.*

We preſume it needleſs to apologize for an Attempt to make ſome Profit from a Work, which has been ſo long bringing to Perfection, and which has been attended with ſuch prodigious Expence; for it would be impracticable for a private Perſon

ſon to beſtow ſo much Time and Money in the Purſuit of Mechanic Powers and Operations, if he might not expect public Encouragement, for what ſo manifeſtly tends both to the Entertainment and Improvement of Mankind.

A Deſcription of this inimitable Piece of Art, muſt be acceptable to every Perſon who has any Degree of Curioſity; for it is a Work of ſuch complicated Contrivance, and affords ſuch a Varicty of Repreſentations, that the moſt fertile Imagination is unable to form an adequate Idea of it: And it is at the repeated Requeſts of ſeveral Perſons of Diſtinction, who have honoured the Proprietor with their Inſpection and Approbation, that this Deſcription of the MICROCOSM *is publiſhed.*

A SUCCINCT
DESCRIPTION
OF THE
MICROCOSM

THE MICROCOSM is built
the Form of a *Roman Temple.*
is ten Feet high, ſix broad in t
Baſis, and conſiſts of five princip
Parts. It is moſt beautifully co
pos'd of Architecture, Sculpture, Painting, M
ſic, and Aſtronomy, according to the moſt a
proved Rules and Principles; and contains
infinite Variety of Moving Figures, whoſe M
tions are a judicious Repreſentation of Life. T
Beauties of its internal Parts are calculated to d
light the Eye, pleaſe the Ear, and improve t
Mind; its external to ſtrike every Behold

ith Admiration at the Regularity and Magnifi-
ence of its Structure.

In the Top of this Machine are three beauti-
l Scenes, which change alternately.

The ſirſt is a curious Repreſentation of the
Nine Muſes, on the Hill *Parnaſſus* †. They
pear playing in Concert, on various Muſical
ſtruments, as the Harp, Hautboy, Flute, Baſs
iol, &c. *Pegaſus* is likewiſe at the Top of
e Hill, and ſeems to fly. The whole is highly
niſhed, the Attitudes ſtriking, and the Motions
e a juſt Reſemblance of the Life.

The ſecond Scene is a delightful Foreſt, in
hich are repreſented a great Variety of Wild
Beaſts.

They were ſuppoſed the Daughters of *Jupiter* and *Mne-*
yne. Their Names are *Calliope*, who preſides over Muſic;
, over Hiſtory; *Erato*, over Love; *Thalia*, over Comedy;
lpomene, over Tragedy; *Terpſichore*, over Dancing; *Euterpe*,
r Muſical Inſtruments; *Polyhymnia*, over Memory; and
nia, who preſides over Aſtronomy.

Parnaſſus is a Mountain of *Antient Greece*, now *European*
key, and is ſituated in *Livadia*, North of the Gulph of *Le-*
to. Its high Top appearing in two Points at *Delphos* (the
ſent *Caſtro*) occaſioned its being called *Biceps Parnaſſus*,
in bicipite ſomniaſſe Parnaſſo.——A Spring riſes below the
t, which is imagined to be the antient *Fons Caſtalius*;
re the *Pythian* Propheteſs, and the Poets, who pretended to
piration, uſed to bathe and drink the Waters.

Beaſts. In this Foreſt * *Orpheus* is ſeen playin on his Lyre, and beating exact Time to eac Tune; and the Beaſts, as though charmed b his exquiſite Harmony, ſeem to expreſs thei Admiration by various Motions. This Piece i executed with great Judgment, and affords th Judicious a very agreeable Entertainment.

THE third Scene is a beautiful Grove, a Proſpect inexpreſſibly pleaſing, and ſeems helpfu to chaſe away Melancholy, and inſpire a Serenity of Mind. Here are Birds flying, and, in various other Motions, warbling forth their melodious Notes, and producing a remarkable Harmony. The Whole is calculated with grea Propriety to entertain both the Eye and the Ear, and to produce pleaſing Ideas in the Human Apprehenſion.

IN the Centre of this magnificent Structure, under a grand Arch of the Corinthian Order, ſtands a large Clock, which is divided into two

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* He was reckoned the Son of *Apollo* and *Calliope*, and is celebrated by the Poets for the Power and Sweetneſs of his Muſic.——The Fiction of his charming the Wild Beaſts, and of his going into the Infernal Regions to fetch back his Wif *Eurydice*, are well known.

Aſtronomical Syſtems, * one above the other, as may be ſeen in the Frontiſpiece at A and B.

THE uppermoſt Syſtem at A is called the *Pto-omaic* † Syſtem; where the Earth repreſents the Centre of Motion, with an Hour-Circle round it, and the Sun and Moon revolve round every twenty-four Hours. This is indeed an erroneous Syſtem, and now quite exploded; as it ſhews not the *real*, but *apparent*, Motion of the Sun and Moon. Accordingly it ſhews the Riſing, Southing, and Setting of the Sun, which always points out the Hour of the Day throughout the whole Year, and riſes and ſets at the ſame Time, as it really does in the Heavens: For there are two blue Circular Plates, called Horizons, one on the Left Hand, and the other on the Right, which riſe and fall according to the Lengthening or Shortening of the Days, in order to regulate the Sun's Riſing and Setting; ſo that as the Sun goes round in twenty-four Hours, (being within the Hour Circle) it paſſes by every Hour on the Plate, and points out the Time of the Day. In order to tell the Time in the Night after the Sun is ſet, there is an Hour Hand placed directly oppoſite to the Sun, alſo a Minute and Second Hand, all on the Centre, ſo that the Time of the Day, or Night, may be as eaſily known by this as any other Clock. There are two other Hands on this Centre, beſides thoſe before deſcribed, one called the Moon's Nodes, which ſhews the Time of the Eclipſes; and the other the Equation of Time, or Difference between the Sun and Clocks.

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* Aſtronomy is a noble Science, worthy the Knowledge of the Fair Sex, and highly deſerving more than the following Encomium of the Poet:

Aſtronomy! Hail Science heavenly born!
Thy Schemes the Life aſſiſt, the Mind adorn.
Thy Aids the Heaven's ſeal'd Volumes wide impart,
And taught the Seamen firſt his uſeful Art;
Gave changing Seaſons their determin'd Space,
And fix'd to Hours and Years their meaſur'd Race.

† The *Ptolomaic* Syſtem was invented by *Claudius Ptolomæus*, a celebrated Aſtronomer and Mathematician of *Peluſium*, in *Ægypt*. He lived in the Beginning of the ſecond Century of the Chriſtian Æra.

THERE are alſo two leſſer Horizons within thoſe of the Sun, to regulate the Riſing and Setting of the Moon, in the ſame manner as thoſe of the Sun. The Moon ſhews the Time of New and Full, her Increaſe and Decreaſe, always repreſenting the ſame Figure as it really does in the Heavens; and does actually riſe and ſet at the ſame Time.

BUT as this Syſtem is found to be falſe, and is now exploded, as before obſerved, the * *Copernican*,

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* This Syſtem was compoſed by *Pythagoras*, and taught by him about 578 Years before Chriſt; but after his Death it lay dormant till it was reviv'd by *Nicholas Copernicus*, a famous Aſtronomer and Mathematician of *Thorn*, in *Pruſſia Royal*. He was born in that City on the 19th of *January* 1473.

nican, or true Solar Syſtem, is placed under it, at B; and plainly demonſtrates, that the Sun is a fixed Body, and the Earth is moveable. This Syſtem is compoſed of ſeventeen Bodies, in the Centre * of which is placed that immenſe Globe of Fire, the Sun, with a Rotation upon its own Axis from Weſt to Eaſt, once in twenty-five Days, ſix Hours, and is in Diameter above Eight Hundred Thouſand Miles, which is ſaid to be a Million Times bigger than the Earth.—Thus the Poet ſings the Glory of the Sun:

Around the Sun the Planets Orbs are hurl'd,
That Centre, Eye, and Glory of the World.
See from his Orb, array'd in all its Pride,
A ſpreading Luſtre ſtreams on ev'ry Side,
And in a Moment gilds the mighty Void!
His Orb ſo rich, his Beams ſo ſwift and bright,
Proclaim the God that made him infinite!

NEXT the *Sun* is the Planet *Mercury*; next to *Mercury* is *Venus*; and without the Orbit of *Venus* is the *Earth*, about the *Earth*, is the *Moon*; without the Orbits of the *Earth* and *Moon*, is *Mars*; and next to *Mars*, is *Jupiter*, and his four *Satellites*, or *Moons*. The higheſt and outwardmoſt Planet of all, is *Saturn*, with his *Ring* and five *Satellites*. This Syſtem is a true Repreſentation of the Heavens; for they all move round in their periodical Times, always correſponding with the Heavenly Bodies; that is, they are ſeen in the ſame Signs of the Zodiack here, as they are in the Heavens, provided the Clock is kept going. Their Times of Revolution are as follows:

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* As the Paths which the ſeveral Planets deſcribe in their Revolutions round the Sun are not Circles but Ellipſes, the Sun is not, in reality, placed in the Centre, but in one of the *Foci* of their reſpective Orbits.

Saturn, the remoteſt * of all the Planets in our Syſtem, is ſeven hundred and ſeventy-ſeven Millions of Miles from the Sun, which is almoſt ten Times farther than our Earth, which makes his Light and Heat ninety Times leſs than with us, and by travelling at the Rate of Eighteen Thouſand Miles every Hour, makes one Revolution round the Sun in twenty-nine Years one Hundred and ſixty-ſeven Days ten Hours, which makes only one *Saturnian* Year. He is in Diameter ſixty-ſeven Thouſand eight Hundred and ſeventy Miles, which is ſix Hundred Times bigger than the Earth, and little more than half the Bigneſs of *Jupiter*. He is ſurrounded by a broad thin *Ring*, * encompaſſing his Body as an Horizon does a Globe; the Breadth of which is twenty-one Thouſand Miles, equal to its Diſtance from *Saturn*.

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* *Fartheſt and laſt, ſcarce warm'd by* Phœbus' *Ray,*
Through his wide Orbit, Saturn *wheels away.*
How great the Change, could we be waſted there!
How ſlow the Seaſons! and how long the Year?
From hence, how large, how ſtrong the Sun's bright Ball!
But, ſeen from thence, how languid and how ſmall!
When the keen North with all its Fury blows,
Congeals the Floods, and forms the fleecy Snows,
'Tis Heat intenſe to what can there be known,
Warmer our Poles than is its burning Zone.
Who there inhabits muſt have other Powers,
Juices, and Veins, and Senſe, and Life, than ours;
One Moment's Cold, like theirs, would pierce the Bone,
Freeze the Heart's Blood, and turn us all to Stone.—
Strange and amazing muſt the Diff'rence be
'Twixt this dull Planet and bright Mercury; †
Yet Reaſon ſays, nor can we doubt at all,
Millions of Beings dwell in either Ball,
With Conſtitutions fitted for that Spot,
Where Providence, all-wiſe, has fix'd their Lot.
BAKER's Univerſe.

† It is computed that the Heat which *Mercury*, continually receives from the *Sun*, would make Water boil on the Surface of the Earth, and were he not a very denſe Body, he would be calcined by the *Solar* Heat.

THIS Planet is ſaid to be ſix Hundred and ſix Millions of Miles above the *Earth*, ſo that the *Sun* appears to him only one-ninetieth Part ſo big as to us; therefore its Light and Heat muſt be dminiſhed in Proportion to its Diſtance, which muſt be ninety-times leſs than with us: But in order to make up for that Deficiency, he he has five *Satellites* revolving round him, all in different Periods of Time, and all on the outſide of his Ring (what this Ring is, or what Uſe it is for, we will not pretend to ſay, but his Moons, we have good Reaſon to believe, reflect Light on him in the Sun's Abſence, as our Moon does on us, ſo that he is very ſeldom without Light): The Revolutions of his Moons are as follows:

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* *Muſe! raiſe thy Voice, myſterious Truths to ſing,*
How o'er the copious Orb a lucid Ring.
Opake and broad, is ſeen its Arch to ſpread,
Round the big Globe at ſtated Periods led:
Perhaps (its Uſe unknown) with gather'd Heat
To aid the Regions of that gelid Seat.
The Want of nearer Phœbus *to ſupply,*
And warm with reflex Beams his Summer's Sky;
Elſe might the high-plac'd World, expos'd to Froſt,
Lie waſte, in one eternal Winter loſt. PRIZE Verſe.

THE firſt makes his Revolution in one Day, twenty-one Hours, and eighteen Minutes.

THE ſecond in two Days, ſeventeen Hours, and forty-one Minutes.

THE third in four Days, twelve Hours, and twenty-five Minutes.

THE fourth in fifteen Days, twenty-one Hours and forty-one Minutes.

THE fifth in ſeventy-nine Days, ſeven Hours, and forty-eight Minutes.

Jupiter, the largeſt of all the Planets, even larger than all the reſt put together, the *Sun* excepted, being in Diameter eighty-one Thouſand one Hundred and fifty-five Miles, which is above one Thouſand Times bigger than our Earth: He is four Hundred and twenty-four

Millions of Miles from the *Sun*, which is almoſt ſix Times farther than the *Earth*; and by moving at the Rate of twenty-four Thouſand Miles every Hour, finiſhes his annual Period in eleven Years three Hundred and thirteen Days and fifteen Hours. Thus the Poet,

> *Then* Jove, *prodigious Planet of the Skies!*
> *His Orb preſents, of huge amazing Size,*
> *In Bulk none equals his enormous Maſs;*
> *The whole joint Syſtem his Contents ſurpaſs.*

Jupiter turns once upon his own Axis every nine Hours and fifty-ſix Minutes (which muſt make his Days and Nights extremely ſhort, in Compariſon to ours) on which Account the diurnal Velocity of his equatorial Parts exceeds the Swiftneſs wherewith he moves in his Orbit; which is a ſingular Circumſtance, ſo far as we know. The ſmall Quantity of Light and Heat he derives from the *Sun*, which is but one twenty-eighth Part of ours, is compenſated by its quick Returns, and by his four *Moons*,[*] none of them leſs than our *Earth*, which revolve round him: So that there is ſeldom any Part of this huge Planet but is enlightened by one or more of them, excepting near the Poles, where there is no Need of them, becauſe the *Sun* conſtantly circulates in or near their Horivon, without ſetting. The firſt, or neareſt *Satellite*, revolves round *Jupiter* in one Day, eighteen Hours, and thirty-ſix Minutes: The ſecond in three Days thirteen Hours and fifteen Minutes: The third in ſeven Days three Hours and fifty-nine Minutes: And the fourth, and outwardmoſt, in ſixteen Days eighteen Hours and an Half.—This Planet, ſeen from its neareſt *Moon*, appears one Thouſand Times as large as our *Moon* does to us, taking up a ſixth Part of the viſible Heavens; increaſing and decreaſing in all the Shapes of our *Moon*, every thirty-ſix Hours and an Half. By the Eclipſes of theſe *Moons*, which happen in every Revolution round *Jupiter*, Aſtronomers have not only diſcovered that Light comes from the *Sun* to us in ſeven Minutes and an Half; but have alſo determined the Longitude of Places on the *Earth*, with greater Certainty and Facility, than by any other Method yet known.

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[*] *For ſignal Honour made, behold! afar,*
Four radiant Moons ſurround th' Imperial Star,
(Large as our boaſted World) whoſe ſilver Light,
Refreſh his Regions in the gloomy Night;
Nor this the Fancy of deluded Eyes,
Mark'd are their Periods thro' ſublimer Skies.
Oft does the Aſtronomer his Tube diſplay,
And view them in Eclipſe with pleas'd Survey.
To this the Curious their Diſcovery own
Of Light's ſwift Motion, and its Meaſure known.
Mr Brown.

Mars is one Hundred and twenty-three Millions of Miles from the *Sun*, which is half as far again as the *Earth;* and by travelling at the

Rate of forty-five Thouſand Miles every Hour in his Orbit, makes one Revolution round the *Sun* in one Year three Hundred and twenty-two Days and ſeventeen Hours, which is one Year with the Inhabitants of this Planet. He is in Diameter four Thouſand, four Hundred, and forty-four Miles, which is almoſt ſix Times leſs than the Earth, and turns round his Axis in twenty-four Hours and forty Minutes, which is the Length of his natural Day. His Light and Heat are equal but to half of ours. If he has any Moon to attend him, ſhe muſt be very ſmall, for our beſt Teleſcopes have not been able to diſcover it:

> *See* Mars, *alone runs his appointed Race,*
> *And meaſures out exact his deſtin'd Space;*
> *No nearer does he wind, nor farther ſtray,*
> *But finds the Point whence firſt he roll'd away.*
>
> Univerſe.

THIS Planet is very eaſily known from the reſt, for he appears but ſmall, and with a ruddy Complexion.

THE *Earth* is removed to the Diſtance of eighty-one Millions of Miles from the *Sun*; which is ſuch a convenient Situation in the Syſtem with Reſpect to Light and Heat, as admits of no Exceſs of either*.

THE

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* *See how the Earth has gain'd that very Place,*
Which, of all others in the boundleſs Space,

Is

THE Earth is in Diameter ſeven Thouſand nine Hundred and ſixty Miles, and makes its Revolution round the *Sun* from Weſt to Eaſt in one Year, or three Hundred and ſixty-five Days five Hours and forty-nine Minutes (that being an equal tropical Year) and moves at the Rate of fifty-eight Thouſand Miles every Hour, which is one Hundred Times ſwifter than a Cannon Ball. It turns once upon its own Axis in every twenty-four Hours, at the Rate of one Thouſand and forty-two Miles in an Hour, which is the Cauſe of Day and Night, and the Riſing and Setting of all the Heavenly Bodies; and the *Earth*'s Axis is always inclined twenty-three Degrees and a Half from the Axis of its Orbit, which is the Cauſe of our Days and Nights being longer at one Time of the Year than the other, and of the Returns of the *Seaſons*.*

Is moſt convenient, and will beſt conduce
To the wiſe Ends requir'd for Nature's Uſe.
You, who the MIND *and* CAUSE SUPREME *deny,*
Nor on his Aid to form the World rely,
Muſt grant had perfect Wiſdom been employ'd
To find, thro' all th' interminable Void,
A Seat more proper, and which beſt became
The Earth *and* Sea, *it muſt have been the ſame.*
Blackmore's Creation.

*Mr WHISTON tells us that,

* If we compute the true Magnitude or Quantity of Matter in the *Earth*, it will appear, upon a moderate Eſtimate, that ſhe is not the 200th Part ſo big as *Jupiter*, nor the 90th ſo big as *Saturn*, nor the 220,000th ſo big as the *Sun*. So that ſhe is very

THE *Moon* is diſtant from the *Earth* about two Hundred and forty Thouſand Miles; ſhe revolves round the *Earth*, from Weſt to Eaſt, once in twenty-ſeven Days ſeven Hours and forty-four Minutes; and, above all the reſt of the Planets, reſpects the *Earth* as the Centre of her Orbit. She has ſomething very peculiar in her Movement; for ſhe makes but one Revolution on her own Axis in the ſame Time that ſhe goes round the *Earth*, always keeping the ſame Face towards us; ſo that a Day and Night with the *Moon* is as long as a *Lunar* Month with us, which can be ſaid of no other Planet in our Syſtem. She is in Diameter two Thouſand one Hundred and ſeventy-five Miles, which is about fifty Times leſs than the *Earth*.

Regard the Spots which mark the Lunar *Face,*
Her Figure changing in her monthly Race;
A Creſcent now, but feebler Light ſhe yields,
Now half her Diſk her bounteous Brother gilds,
Now riſing in the Eaſt, full-orb'd ſhe glows,
And o'er the Night her ſilver Mantle throws.
The Roughneſs on her broken Edge reveals
Her Surface maſk'd with Vales and painted Hills.
Her brighter Parts the SAGE *mountainous deems;*
Her darker, Oceans, Seas, and ample Streams.

Mr BROWN.

On

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inconſiderable, if compared with the reſt of the Solar Syſtem, and much more ſo, if with the whole Univerſe, or Syſtems of the fixed Stars; in the Elegancy of the prophetic Expreſſions, *as a Drop of a Bucket, as the ſmall Duſt of the Balance, yea leſs than nothing and Vanity.* Inſomuch, that if it was poſſible for the whole Solar Syſtem to be annihilated, it would not be miſſed any more than a Grain of Sand from the Sea-Shore.

On a Fine MOON-LIGHT NIGHT.

So when the Moon, *reſulgent Lamp of Night,*
O'er Heav'n's clear Azure ſpreads her ſacred Light;
When not a Breath diſturbs the deep Serene,
And not a Cloud o'ercaſts the ſolemn Scene;
Around her Throne the vivid Planets roll,
And Stars unnumber'd gild the glowing Pole;
O'er the dark Trees a yellow Verdure ſhed,
And tip with Silver ev'ry Mountain's Head:
Then ſhine the Vales, the Rocks in Proſpect riſe,
A Flood of Glory burſts from all the Skies;
The conſcious Swains, rejoicing in the Sight,
Eye the blue Vault, and bleſs the uſeful Light.

POPE's Homer.

Fair Venus, *next fulfils her larger Round,*
With ſofter Beams, and milder Glory crown'd;
Friend to Mankind, ſhe glitters from afar,
Now the bright Ev'ning, *now the* Morning *Star.*

Univerſe.

Venus is diſtant from the *Sun* fifty-nine Millions of Miles; and, travelling at the Rate of ſeventy Thouſand Miles ever Hour, finiſhes her annual Circuit in two Hundred and twenty-four Days and ſeventeen Hours, in which Time ſhe has only nine Days and a Quarter. She is computed to be a Globe of ſeven Thouſand nine Hundred and ſix Miles in Diameter, ſo that there is very little Difference between the Bulk of the *Earth* and this Planet Her Light and Heat from the *Sun* is double that of the *Earth*'s. This Planet made a Tranſit over the *Sun*'s Diſk, the 6th of *June*, 1761; when ſhe appeared like a large Beauty Spot on a Lady's Face: She will make another Tranſit over the *Sun* the ſixth of *June*, 1769.

Mercury, the neareſt Planet to the *Sun*, * goes round him in eighty-ſeven Days twenty-three Hours of our terreſtrial Time, which is the Length of his Year; but his Vicinity to the *Sun* renders him very ſeldom to be ſeen; and no Spots appearing on his Diſk, the Time of his Rotation on his Axis, or Length of his Days and Nights, is to us unknown. His Diſtance from the *Sun* is thirty-two Millions of Miles, and is in Diameter two Thouſand four Hundred and ſixty Miles, which is about a thirtieth Part of our *Earth*. He moves one Hundred Thouſand Miles in his Orbit every Hour; (a moſt inconceivable Velocity indeed!) His Light and Heat is ſeven Times as much as ours, and the *Sun* appears ſeven Times as big to him as it does to us.

THEIR Orbits, in this Machine, are not Circles, but Ellipſes, and have all their due Inclinations, agreeable to their different Latitudes; that is, they lie in different Planes: So that we may juſtly ſay, this Machine always ſhews a true Repreſentation of the Heavenly Bodies.

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* *Firſt* Mercury *amidſt full Tides of Light,*
Rolls next the Sun, *thro' his ſmall Circle bright.*
All that dwell there muſt be refin'd and pure;
Bodies like ours ſuch Ardour can't endure.
Our Earth *would blaze beneath ſo fierce a Ray,*
And all its marble Mountains melt away. Univerſe.

But as theſe Planets always move in this Syſtem correſpondent with the Heavenly Bodies, their Motions become ſo very ſlow, that they are imperceptible; (for they all move in their periodical Times, as before deſcribed) therefore we open a Pair of folding Doors underneath, which diſcovers four other Syſtems (two large and two ſmall) where their Motions are more diſcernable.

The firſt, on the left Hand, is the SOLAR SYSTEM, which repreſents the Planets in their proportionable Magnitude to each other, and performing their annual and diurnal Revolutions at the ſame Time, and at their proportionable Diſtance from each other.

The other large one, on the right Hand, is a Syſtem of *Jupiter* and his four *Moons*, where they all move round him in their different Periods of Time, as before deſcribed, which renders the Doctrine of *Satellites* very eaſy to be underſtood.——They ſhew the Immerſion and Emerſion with *Jupiter*'s Body, and the Nature of Eclipſes among themſelves.

The uppermoſt of the two ſmalleſt Syſtems is to ſhew the Nature of the Eclipſes of the *Sun* and *Moon*, and ſhews that no Eclipſe * of either can happen but at a New or Full *Moon*; and why they don't happen every New and Full *Moon* is, becauſe the *Moon*'s Orbit lies oblique to the Plane of the *Earth*'s Ecliptic, that is, one half of the *Moon*'s Orbit is above, and the other half below the *Earth*'s, croſſing it in two oppoſite Points, called the *Moon*'s Nodes; and the Nodes, or Points of Interſection with the *Earth*'s Path, have a Motion through it, contrary to the Order of the Signs; otherwiſe, if the *Moon*'s Orbit or Path lay in the ſame Plane with the *Earth*'s, there would be an Eclipſe of the *Sun* every New *Moon*, and an Eclipſe of the *Moon* at every Full; becauſe the two Bodies, the *Earth* and the *Moon*, would be in a Right Line with the *Sun*.

THE other ſmall Syſtem is to ſhew the ſtationary and retrograde Motion of the Planets, and plainly proves the *Earth*'s annual Motion; a Scheme too difficult to be eaſily comprehended in Lines, but is rendered very obvious and intelligible in this Machine.

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* As many People are terrified at the Appearance of an Eclipſe, which they imagine, ſeems to portend ſome dire Event, and frighten others who are unacquainted with the Cauſe; it may not be amiſs here to obſerve, that there is nothing at all extraordinary in it: For an Eclipſe of the *Sun* is nothing more than the *Moon*'s paſſing between the *Sun* and the *Earth*, ſo as the Shadow of the *Moon* falls upon the *Earth* in paſſing by it; and an Eclipſe of the *Moon* is cauſed by the *Earth*'s being between the *Sun* and the *Moon*.

THERE is alſo another Piece of Mechaniſm, independent of this Machine, which is placed on the Right Hand Side.—This exhibits the Trajectory and Type of the COMET,* whoſe Appearance was ſo much looked for in 1758, but did not appear till 1759. It ſhews the accelerating and decreaſing of its Velocity; the lengthening and ſhortening of its Tail; and its near Approach to the *Sun*; its Aphelion and Perihelion; and its moving thro' the Arches of equal Areas in equal Times.

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* The Phænomenon of COMETS, or BLAZING STARS, generally ſpreads Terror and Amazement, and, whenever they are ſeen, afford ſuch a ſingular Appearance as affects the Spectators with Wonder and Aſtoniſhment: Yet they are not to be deemed deſtructive, but rather Conſervators of the Planetary Syſtem; for their Tails are ſuppoſed to be prodigious Quantities of Fume and Vapours, flying off from the Bodies of the Comets, as they become more and more heated in their Approach to the *Sun*, and are found by actual Meaſurement to be thirty or forty Millions of Miles, ſome of them ſeventy or eighty Millions in Length, when neareſt the Sun. Some imagine they are diſperſed about the Planetary Syſtem, in ſuch a manner as to ſupply the Planets with Moiſture; which they ſuppoſe continually decreaſes by Vegetation, Putrefaction, &c. And they are found to run through very great Extremes both of Heat and Cold; for Aſtronomers tell us, that the Comet of 1680 went ſo near the Sun as to become heated 2000 Times hotter than red hot Iron, and from thence it went to the Diſtance of Eleven Thouſand Millions of Miles, about Seventeen Thouſand Times colder than our frigid

At his Command, affrighting Humankind,
Comets *drag on their blazing Lengths behind;*
Nor, as we think, do they at Random rove,
But in determin'd Times, through long Ellipſes, move:
And tho' ſometimes they near approach the Sun,
Sometimes beyond our Syſtems Orbit run,
Throughout thier Race they act their Maker's Will,
His Power declare, his Purpoſes fulfill. Mr Baker.

Zone.* Theſe great Extremities have occaſioned many to think they are appointed as the Place of Torment, or Hell, for the Damned.—Thus the Poet:

Who can the Comet'*s wond'rous Journey tell,*
Seats not unaptly deem'd the Place of Hell.
Now burning in the Sun's immediate Beams;
More frigid now than Greenland'*s frozen Streams.*
Of all God'*s Works, our Reaſon nothing ſhews,*
So fitly form'd for Torments and for Woes.

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* "It may ſeem unaccountable to an *unlearned* Reader, that Aſtronomers ſhould ſpeak ſuch amazing Things, and ſpeak them with ſuch an Air of *Aſſurance;* concerning the Diſtances and Magnitudes, the Motions and Relations of the heavenly Bodies.—I would deſire ſuch a Perſon to conſider the Caſe of ECLIPSES, and with what *Exactneſs* they are calculated. They are not only foretold, but the very Inſtant of their *Beginning* is determined.—The preciſe Time of their Continuance is aſcertained; aſcertained almoſt to the *Nicety* of a Moment; and, what is ſtill more ſurpriſing, for the Space of *Hundreds* or *Thouſands* of Years to come.—As this is a Matter of Fact, abſolutely indiſputable, it is alſo a very obvious, yet ſolid Demonſtration, that the Principles of Science, on which thoſe Calculations proceed, are not mere Conjecture, or precarious Suppoſition; but have a *real*, a *certain* Foundation, in the Nature and Conſtitution of Things."

Harvey's Starry Heavens.

THIS Piece of Mechaniſm alſo ſhews the Phænomenon of the Tranſit of the Planet *Venus* over the *Sun*'s Diſk, on the ſixth of *June*, 1761, when ſhe appeared like a little black Patch on the Face, tho' ſhe is nearly as big as our *Earth*; from whence it is eaſy to judge how immenſely large the *Sun* muſt be, when a Globe of ſeven Thouſand nine Hundred Miles in Diameter, appeared but a Spot in it.

IT likewiſe ſhews the Beginning, Middle, and Ending, of that Eclipſe of the Sun, which happen'd on the firſt Day of *April*, 1764: This is allowed to be the moſt natural Repreſentation of an Eclipſe that was ever exhibited.

Thus I've the Motions taught of Stars *above,*
Of Sun *and* Moon, *and by what Cauſe they move.*
And how eclipſed *they loſe their gaudy Light,*
And ſpread o'er all an unexpected Night.
As if they wink'd, and then with open Eyes,
View'd all again, and clear'd the lower Skies.

CREECH.

HAVING now briefly given a Deſcription of the Aſtronomical Part of this magnificent Machine, a Part which is beheld with equal Pleaſure and Inſtruction; I ſhall now proceed to mention a few of its remaining Beauties, in order to give the Reader a farther Idea of this excellent Piece of Art.

A delightful Landſcape is next preſented to View, with a Proſpect of the Ocean. On the Sea, Ships are ſailing according to true Perſpective, their Motions, &c. being agreeable to their various Diſtances. On the Land, are Coaches, Carts, and Chaiſes, paſſing along, whoſe Wheels turn round as if actually on the Road; and the Perſons, Horſes, &c. altering their Poſitions, as they aſcend or deſcend a ſteep Hill. In the ſame Piece, a pleaſant River preſents itſelf near the Road, on which there appears a Gunpowder Mill at Work; and in which River are Swans ſwimming, fiſhing, and bending their Necks backward to feather themſelves; with the Diverſion of the Dog and Duck, &c. In a Word, it exhibits an aſtoniſhing Diſplay both of Deſign and Execution; and the Beholders generally diſcover Beauties more than we pretend to give any Deſcription of.

THE next is a very entertaining Repreſentation of a Carpenter's Yard, wherein the various Branches of that Trade are moſt naturally repreſented; and the ſeveral Artificers ſeem as though actually at real Labour, and their various Attitudes and Motions are an accurate Reſemblance of Life.

AT length all the various Parts of this Machine are at once preſented to the Spectator's

View in Motion, when upwards of One Thouſand Two Hundred Wheels and Pinions move all together: And during the whole Performance, it plays ſeveral fine Pieces of Muſic on the Organ, in a very elegant Manner; and the Organ is likewiſe provided with a Set of Keys, ſo that Ladies or Gentlemen may, themſelves, perform on the Organ what Pieces of Muſic they beſt like.

THUS have I touched on ſome of the moſt ſtriking Beauties of this aſtoniſhing Pile of Art, which, I will venture to affirm, for Elegance of Deſign, Structure, Variety of Scenes, Utility of Syſtems, Harmony, &c. &c. &c. has not its Equal. But let it not be thought that THIS or ANY Deſcription, can give the Reader an adequate Idea of it; for there are numberleſs Beauties to be diſcovered by a diſcerning Eye, which Words are wanted to expreſs: Nor had the Proprietor any other View in publiſhing it, than to give the Public a general Idea of THE MICROCOSM; to pay a Tribute of Praiſe to the Memory of the late Mr HENRY BRIDGES, the Conſtructor of it; and to make a few Moral Reflections on the Syſtems exhibited in this Machine.

IF the Contrivance and Ingenuity of the Artiſt who compleated the MICROCOSM (or *Little*

World) appear amazing to human Apprehenſion, how are we ſtruck with Wonder at that Almighty Skill which formed the UNIVERSE! Which, according to the Prophet *Iſaiah*'s noble Expreſſion, *has meted out the Heavens with a Span!* If we look upwards to the Midnight Luminaries, and ſurvey that infinite Multitude of Stars, whoſe Magnitudes are aſtoniſhing, and regard them as the Sovereigns of ſo many Syſtems, each accompanied with his Planetary Equipage: If we conſider what a Multiplicity of mighty Spheres muſt be perpetually running their Rounds in the Upper Regions! Yet that none miſtake their Way; none fly off from their Orbits, into extravagant Excurſions; none preſs in upon their Centre, with too near an Approach; but all their Rotations proceed in eternal Harmony, keeping ſuch Time, and obſerving ſuch Laws, as are moſt exquiſitely adapted to the Perfection of the Whole:—

> *And if through vaſt Immenſity we pierce,*
> *See Worlds on Worlds compoſe one Univerſe;*
> *Obſerve how Syſtem into Syſtem runs,*
> *What other Planets circle other Suns.*
>
> Eſſay on Man.

Can we forbear enquiring, Of what were thoſe mighty Orbs formed?—Amazing to relate! they were produced without Materials. They ſprung from Emptineſs itſelf. The ſtately Fabrick of univerſal Nature emerged out of Nothing.

thing. A bare *Fiat* accompliſhed all. LET THEM BE, ſaid GOD. What wonderful Force fixes ſome of thoſe vaſt Globes on an immoveable Baſis! What irreſiſtible Impulſe bowls others through the dark Profound! And what coercive Energy confines their impetuous Courſes within the niceſt, ſtricteſt Bounds! Nothing but his Sovereign Will:

All are but Parts of one ſtupendous Whole,
Whoſe Body Nature is, and God the Soul.

Eſſay on Man.

For all Things were at firſt conſtituted, and all to this Day abide, according to his Ordinance: What an aſtoniſhing Inſtance of Infinite Might is this! Such Conſiderations will naturally excite us to cry out, in the Words of the Royal Pſalmiſt, *O Lord! how manifold are thy Works! In Wiſdom haſt thou made them all.*

A
PARODY
ON
POPE's PROLOGUE to CATO.

Addreſſed to the Late

Mr *HENRY BRIDGES*,

Conſtructor of that Elaborate Piece of Mechaniſm,

CALLED, THE

MICROCOSM.

By the late Dr BURTON, *of* Yarmouth.

TO ſooth the Soul by tender Strokes of Art,
To raiſe the Genius and to rouſe the Heart,
To make Mankind by Harmony elate,
Soften the Breaſt and baniſh direful Hate,
The ruffled Paſſions potent to aſſwage,
To conquer Fear and to enervate Rage,
Was *Muſic*'s Power, by *Orpheus* firſt ordain'd;
Fierce Beaſts were tam'd, and fiercer Tyrants chain'd.
Th' enchanting Sounds through their whole Fabrick crept,
And *Savage* Mortals wonder'd why they wept.

Our *Artiſt* ſhuns by vulgar Springs to move
His mimick Race below, or Orbs above.

Here Pleaſure flows from *Scientific* Cauſe,
Whilſt Ingenuity extorts Applauſe:
He bids your Breaſt with Emulation riſe,
And tho' you're e'er ſo learn'd, e'er ſo wiſe,
By Arts *Mechanic* you will here be taught
More than *Rome* knew, or *Grecian* Sages thought.
Thoſe Objects to your Senſes he diſplays,
Which the Spectator of our Globe ſurveys;
The various Movements and the changing State,
Of Beings active and inanimate.
Whilſt BRIDGES gives his MICROCOSM Laws,
What Boſom beats not in Invention's Cauſe?
Who ſees him work, but envies every Deed?
Who hears him lecture, hears even *Newton* read.
Britons attend, be Worth like his approv'd,
And ſhew you have the Virtue to be mov'd.
With honeſt Scorn our wond'rous *Artiſt* view'd
Meer Machinations on the World obtrude;
French and *Italian* Puppets pleas'd too long,
And *Engliſh* Senſe was barter'd for a Song.
Dare to invent yourſelves, to *Fame* aſpire,
Be juſtly warm'd with your own native Fire.
BRIDGES! thoſe Sounds muſt raviſh every Ear,
Which *Handel*'s Self did not diſdain to hear.

FINIS.

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